9-1265-368-10-1/1990

TM 9-1265-368-10-1

Supersedes copy dated 22 January 1982

OPERATOR'S MANUAL

MULTIPLE INTEGRATED LASER ENGAGEMENT SYSTEM

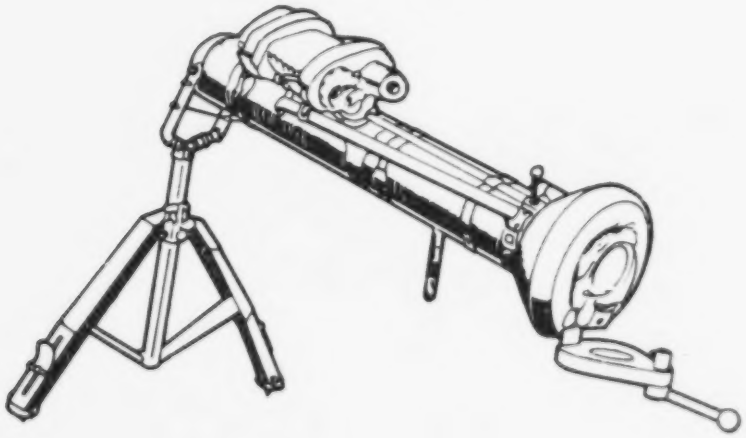
(MILES)

SIMULATOR SYSTEM, FIRING LASER: M62

(NSN 1265-01-090-0103)

FOR

DRAGON WEAPON SYSTEM



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HEADQUARTERS, DEPARTMENT OF THE ARMY

JULY 1988

This copy is a reprint which includes current pages from Changes 1.

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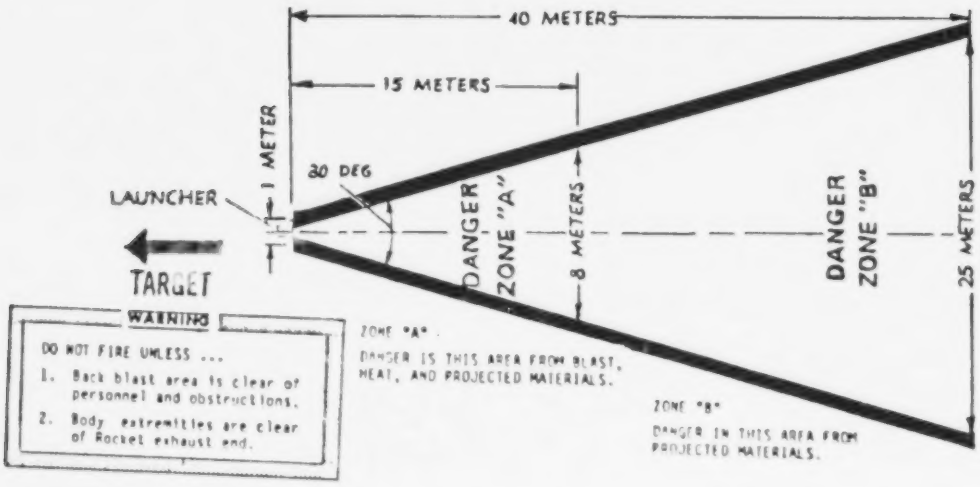
READEX FICHE best copy available

WARNING

BACK BLAST DANGER ZONES



NEVER STAND WITHIN THE DANGER ZONE WHILE LOADING THE ATWESS. ALWAYS STAND TO THE RIGHT SIDE OF THE REAR OF THE LAUNCHER. AFTER THE CARTRIDGE IS INSERTED INTO THE CHAMBER, KEEP HANDS, ARMS, AND OTHER PORTIONS OF THE BODY AWAY FROM THE HOLE IN THE CENTER OF THE BREECH DOOR. FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN PERSONNEL BEING BURNED BY THE BACKBLAST ESCAPING THROUGH THE HOLE IN THE CENTER OF THE BREECH DOOR.

NEVER ARM AN ATWESS UNTIL YOU ARE READY TO FIRE.

TREAT THE DRAGON/MILES AS YOU WOULD ANY LOADED AND ARMED WEAPON. DO NOT DROP DRAGON/MILES WHEN ATWESS IS LOADED AND ARMED. A STRONG JOLT MAY SET OFF THE ATWESS.

HANDLE ATWESS CARTRIDGES WITH THE SAME CARE YOU USE WITH ANY LIVE AMMUNITION.

ALWAYS WEAR EARPLUGS WHEN FIRING THE DRAGON/MILES.

ALTHOUGH THE LASER LIGHT FIRED BY MILES EQUIPMENT TRANSMITTERS IS CONSIDERED SAFE BY THE BUREAU OF RADIOLOGICAL HEALTH, SUITABLE PRECAUTIONS MUST BE TAKEN TO AVOID POSSIBLE DAMAGE TO THE EYE FROM OVEREXPOSURE TO THIS RADIATED ENERGY. TAKE THE FOLLOWING PRECAUTIONS:

- NEVER LOOK AT THE LASER EMITTER AT CLOSE RANGE (LESS THAN 12 METERS).
- NEVER LOOK AT THE LASER EMITTER THROUGH OPTICS SUCH AS BINOCULARS, TELESCOPES, OR WEAPON SIGHTS AT RANGES LESS THAN 75 METERS.
- NEVER LOOK AT THE LASER EMITTER DIRECTLY ALONG THE AXIS OF THE BORE OF THE WEAPON.

FOR INFORMATION ON FIRST AID, SEE FM 21-11.

TECHNICAL MANUAL

TM9-1265-368-10-1

TM9-1265-368-10-1*

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, D.C., 15 July 1988

OPERATOR'S MANUAL
FOR
MULTIPLE INTEGRATED LASER ENGAGEMENT SYSTEM (MILES)
SIMULATOR SYSTEM, FIRING LASER: M62
(NSN 1265-01-090-0103)
FOR
DRAGON WEAPON SYSTEM

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in back of this manual direct to: Commander, US Army Armament, Munitions and Chemical Command, ATTN: AMSMC-MAS, Rock Island, IL 61299-6000. A reply will be furnished to you.

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* Supercedes TM 9-1265-368-10-1 dated 22 January 1982, including all changes.

Storage Instructions

Equipment Distribution:

The MILES Equipment for the DRAGON/MILES is shown in Task 1 of this Technical Manual (TM). Use the picture with Task 1 as a guide for your equipment distribution. Be sure to give each soldier a copy of this TM along with the MILES Equipment.

Equipment Return and Storage:

When receiving equipment for storage, always inspect the returned equipment using Task 9 in this TM for guidance.

Return all MILES equipment and the TMs to their transit cases.

Special Instructions for Infrequently Used Equipment:

If DRAGON/MILES equipment is unused for 60 days, remove from transit cases and perform Tasks 1, 2, and 9 in this TM.

Skills Needed To Use This Manual

TO USE THIS MANUAL, YOU MUST BE ABLE TO:

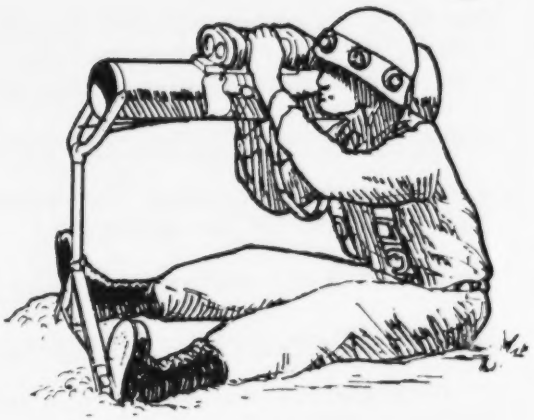
1. Aim and Fire a DRAGON (See TM 9-1425-480-10).

2. Complete DA Form 2402.

IF YOU CAN NOT DO THESE TASKS, ASK YOUR NCO OR INSTRUCTOR TO SHOW YOU HOW. WHEN YOU CAN DO ALL OF THE TASKS, GO ON WITH THIS MANUAL.

DRAGON operators also carry the M16A1 rifle and wear a Man Worn Laser Detector (MWLD) assembly. Instructions for using the M16A1/MILES and the MWLD are found in TM 9-1265-370-10-1.

1



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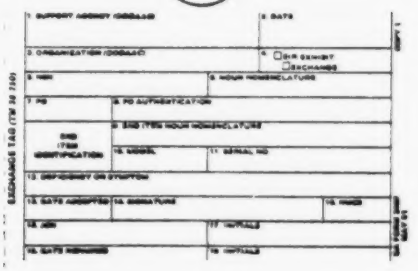


How to Use This Manual

efore You Use Any DRAGON/MILES Equipment, Read This Manual.

The first part of the manual briefly explains the purpose of the equipment and how it is used.

Then comes step-by-step guidance for every task you need to do with the DRAGON/MILES equipment.

TASK 2 Inspect and Clean DRAGON and ATWESS Tube Assembly

CAUTION: DO NOT USE PETROLEUM-BASED SOLVENTS TO CLEAN TRACKER

1. Check for any damage that would prevent normal operation of the DRAGON/MILES.
2. Rub lens paper or clean dry cloth on lenses to remove any dirt or oil.

The tracker head is permanently attached to the tube assembly and is not removable in the field.

- Report any damage on DA Form 2402. Replace the DRAGON/MILES only if not operable.

L3

The task pages look like this. Some longer tasks run more than one page. Before you begin a task, read all of the steps in that task and look at each drawing carefully. To help perform the task, some steps have matching numbers in the drawings. Do each step just the way you are instructed.

- Do each task in the order it occurs in the manual

  - DON'T JUMP AHEAD - DON'T SKIP ANY STEPS -

- If your equipment has a problem you can't fix using this manual, report it on DA Form 2402. To get a replacement, turn in the faulty equipment and the completed DA Form 2402 to your NCOIC.

- In the back of this manual is a list of abbreviations and an explanation of terms used in this manual. If you read a word you don't understand, check pages 29, 30, and 31 for an explanation.

General Information

This manual shows you how to operate and maintain the DRAGON/MILES laser simulator equipment. The operator and maintenance tasks are listed in the Table of Contents on Page i.

Purpose of Equipment:

The DRAGON/MILES is a battery-powered laser transmitter and an Antitank Weapon Effects Signature Simulator (ATWESS) assembly which permits realistic combat training. The DRAGON/MILES operator fires a harmless invisible laser (light) beam at a target. The laser detector on the target causes various alarms to activate.

Forms and Records:

a. Reports of Maintenance or Equipment Replacement.

   Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 738-750, the Army Maintenance Management System (TAMMS).

b. Reporting Equipment Improvement Recommendations (EIRs)

   EIRs can and must be submitted by anyone who is aware of an unsatisfactory condition with the equipment design or use. It is not necessary to show a new design or list a better way to perform a procedure, just simply tell why the design is unfavorable or why a procedure is difficult.

   Mail completed EIRs directly to:

   Commander, U.S. Army Armament,
   Munitions and Chemical Command
   Attn: AMSMC-QAD
   Rock Island, IL 61299-6000

   A reply will be furnished to you.

and Receipt Manual

and receipts for Components of End Items (COEI), Basic Issue Items (BII), and dditional Authorization List (AAL) Items are published in a Hand Receipt Manual, TM -1265-368-10-1-HR. This manual is published to aid in property accountability and s available through: Commander, U.S. Army Adjutant General Publication Center, 800 Eastern Boulevard, Baltimore, MD 21220.

Equipment Description

Capabilties and Features:

Major Features of the DRAGON/MILES are:

a. Simulated DRAGON launch tube.

b. Eye-safe laser transmitter mounted in simulated DRAGON tracker head. The tracker head is permanently mounted to the launch tube.

c. Anti-Tank Weapon Effects Signature Simulator (ATWESS) mounted inside of DRAGON tube.

The DRAGON/MILES can be operated in temperatures from -35°C (-31°F) to 62°C (144°F). It permits tactical skills to be practiced under realistic combat conditions.

The laser transmitter sends harmless, invisible laser (light) beams toward the target. If the laser beam hits the target, detector assemblies on the target sense the beam, and cause an alarm to sound. In addition, if the target is a vehicle, an externally-mounted light on the vehicle will flash.

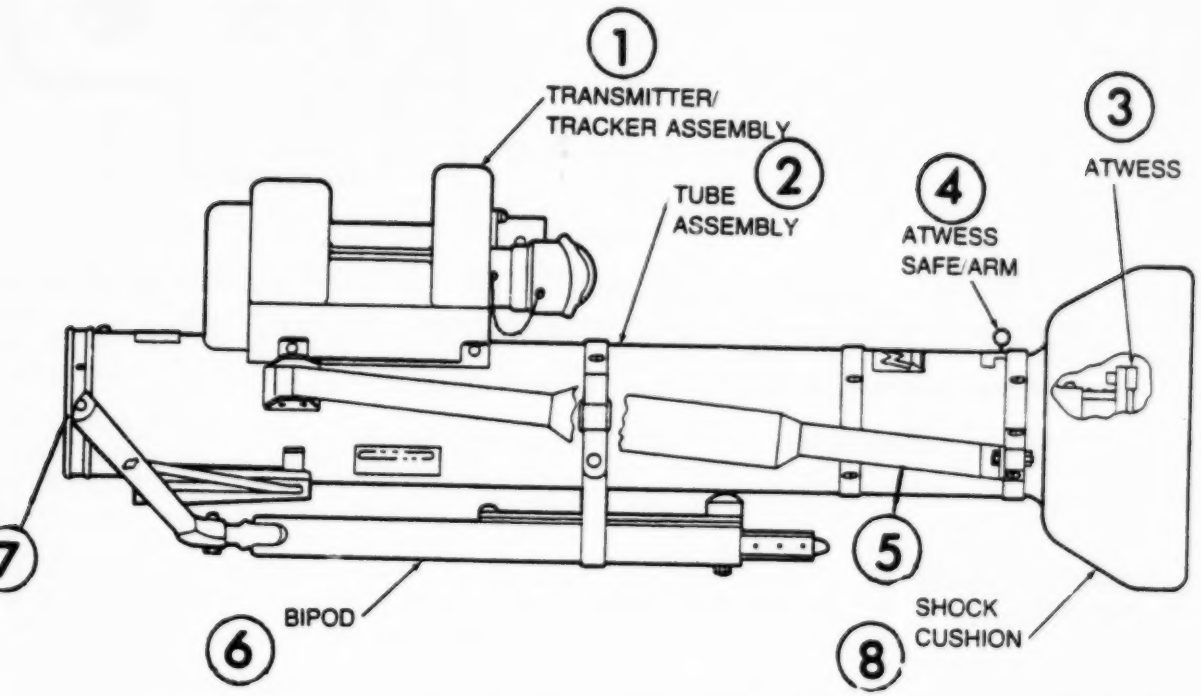
The ATWESS device provides a realistic weapon signature, including muzzle flash, noise, and backblast smoke.

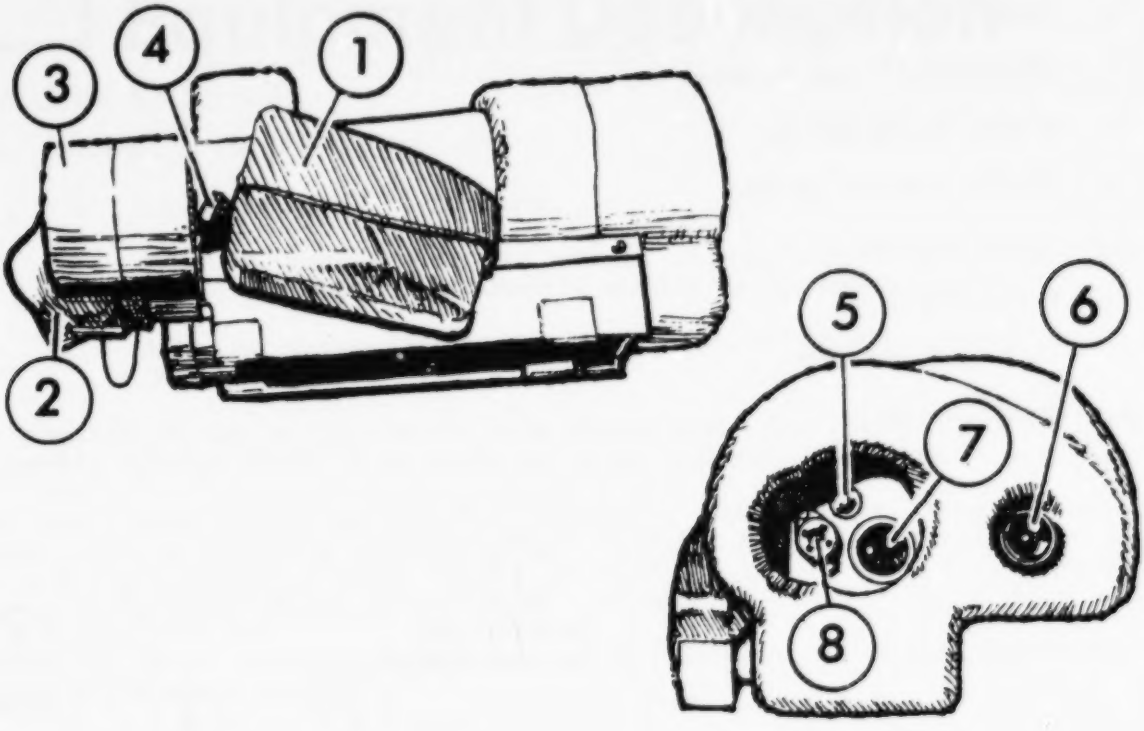
Battery Information:

The DRAGON/MILES uses a BA-3090/U, 9-volt alkaline battery which provides approximately 100 hours of power.

LOCATION OF COMPONENTS

1. DRAGON/MILES Tracker Head
2. DRAGON/MILES Tube Assembly
3. ATWESS Firing Device
4. ATWESS Safe/Arm Switch
5. Carrying Strap
6. Firing Bipod
7. Battery Access Door
8. Shock Cushion





1. Trigger
2. Eyepiece, Telescope
3. Rounds Remaining Display
4. Trigger Safety Switch
5. Rounds Remaining Push-to-Read Button
6. Signting Telescope, Front View
7. Laser Transmitter Lens
8. Weapon Key Receptacle

How it Works:

The DRAGON/MILES works much like a real DRAGON. However, instead of firing a missile, the DRAGON/MILES fires a harmless laser (light) beam at targets. To make the DRAGON/MILES as real as possible, ATWESS is built into the tube assembly to provide a backblast similar to the actual DRAGON missile.

How the DRAGON/MILES is Used:

After batteries have been installed in the DRAGON/MILES Laser Transmitter and MWLD, the following steps will be performed:

- The controller tests your equipment and establishes your basic load in the ATWESS or Dry-Fire mode.
- You insert the yellow weapon key into the DRAGON/MILES receptacle and turn to ON position to turn on the laser transmitter.
- You observe a target, and then load and arm the ATWESS.
- You press the DRAGON/MILES trigger to fire the weapon. The ATWESS fires immediately, providing backblast, noise, and smoke to simulate a real DRAGON launch.
- You continue tracking the target. One second after the ATWESS fires, the laser transmission begins. You must track the target for the 6 seconds that the laser transmits to achieve a "kill." Thus your total tracking time must be 7 seconds.
- You may fire a round every 15 seconds.

The basic load of ammunition for the DRAGON/MILES is 4 rounds. Because each firing requires an ATWESS cartridge, you need 4 cartridges for each exercise. To determine the number of rounds remaining during an exercise, push the ROUNDS REMAINING push button (see Task 6). The rounds counter shows the number of rounds remaining.

The DRAGON/MILES also has a dry-fire (non-ATWESS) fire mode. To fire the transmitter without using an ATWESS cartridge, a controller key must be inserted in the DRAGON/MILES tracker head and turned to the non-ATWESS position. Normally, this mode is used only for testing the equipment.

The DRAGON/MILES operator wears a harness equipped with laser detector assemblies and an alarm. If opposing forces fire a MILES equipped weapon at the DRAGON/MILES operator, one of two things may happen:

- Your alarm beeps for one second. Take cover ... the enemy scored a near miss on you.

  Or ...

- Your alarm beeps continuously. You have been "killed." You may now use your yellow weapon key to shut off the alarm. Remove the yellow weapon key

from your weapon, and insert the key into the receptacle on your harness. Turn the key in the receptacle to shut off the alarm. Your weapon is now disabled. If you attempt to replace the key in the weapon, the alarm will again sound. This "killed" condition can only be cleared by the Controller with his controller key.

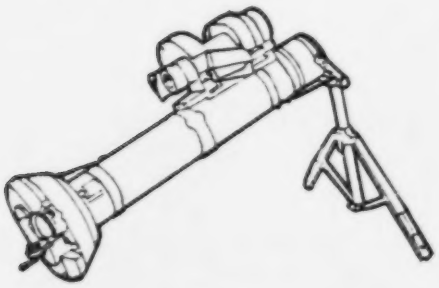
The target vehicles also have laser detector assemblies. When the DRAGON/MILES laser beam strikes an armored vehicle, the CVKI light mounted on the vehicle flashes.

- Two to three flashes mean a "near miss."
- Four to six flashes mean a "hit."
- Continuous flashing means a "kill."

Equipment Limitations:

DRAGON/MILES has the same range and operational capabilities as the DRAGON missile launcher, but a weak battery or dirty laser transmitter lens may reduce the effective range of DRAGON/MILES. The DRAGON/MILES will "kill" out to a range of 1000 meters. The primary targets for DRAGON/MILES are vehicles, but the DRAGON/MILES is effective against all MILES-equipped vehicles and personnel.

TASK 1 Get This Equipment From Your NCOIC



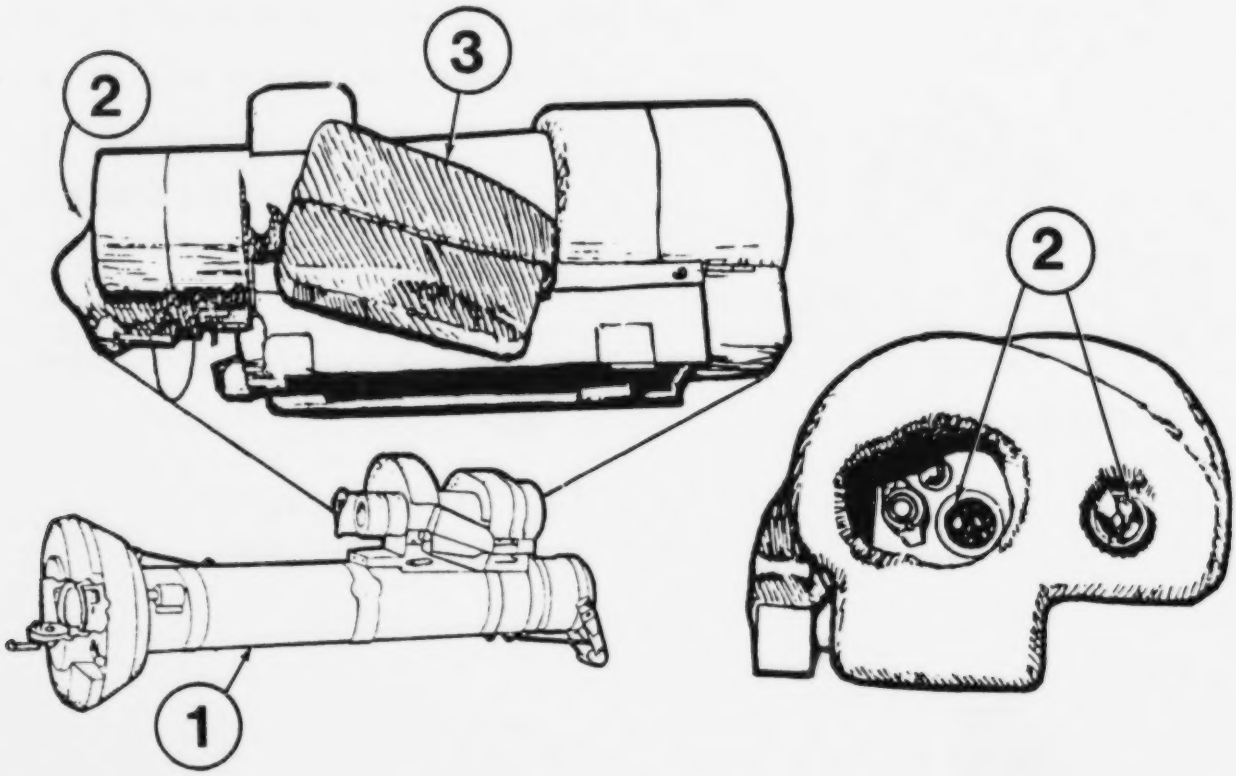
DRAGON/MILES Assembly

Yellow Weapon Key
(In Tracker head)

ATWESS Cartridges

BA-3090/U
9 Volt Battery

TASK 2 Inspect and Clean DRAGON and ATWESS Tube Assembly



CAUTION: DO NOT USE PETROLEUM-BASED SOLVENTS TO CLEAN THE TRACKER.

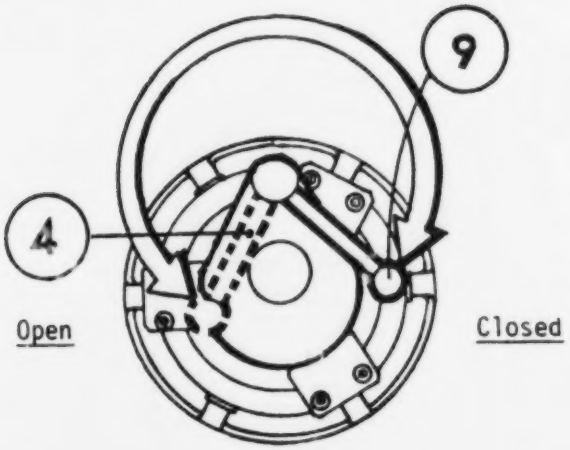
1. Check for any damage that would prevent normal operation of the DRAGON/MILES.

2. Gently rub lens paper or clean dry cloth on lenses to remove any dirt or oil.

   The tracker head is permanently attached to the tube assembly and is not removeable in the field.

3. Inspect the trigger assembly for damage, holes, tears, and moisture.

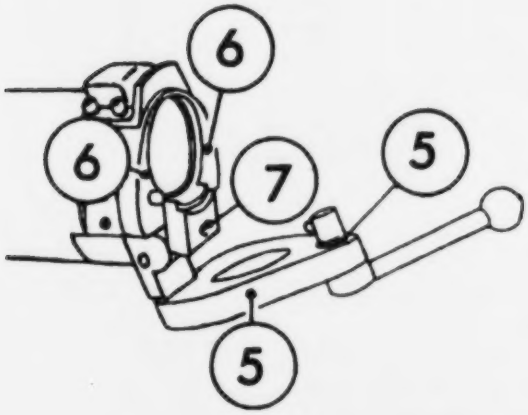
TASK 2



WARNING

Should any damage exist to the trigger assembly, do not operate.

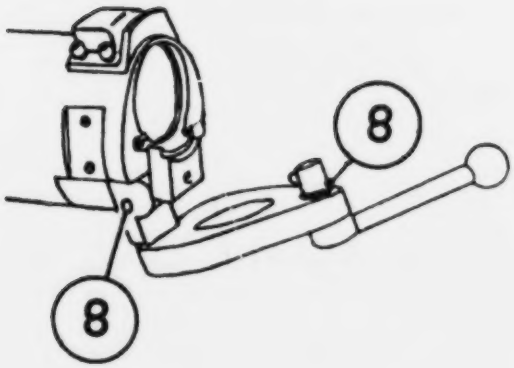
4 Check that the ATWESS breech lock lever will move from closed position to open position.



5 Use CLP to clean powder from the breech door and breech lock lever.

6 Use CLP to clean powder from contacts in the breech block. Also, clean the entire breech block.

7 Use CLP to clean powder from the cartridge extractor.

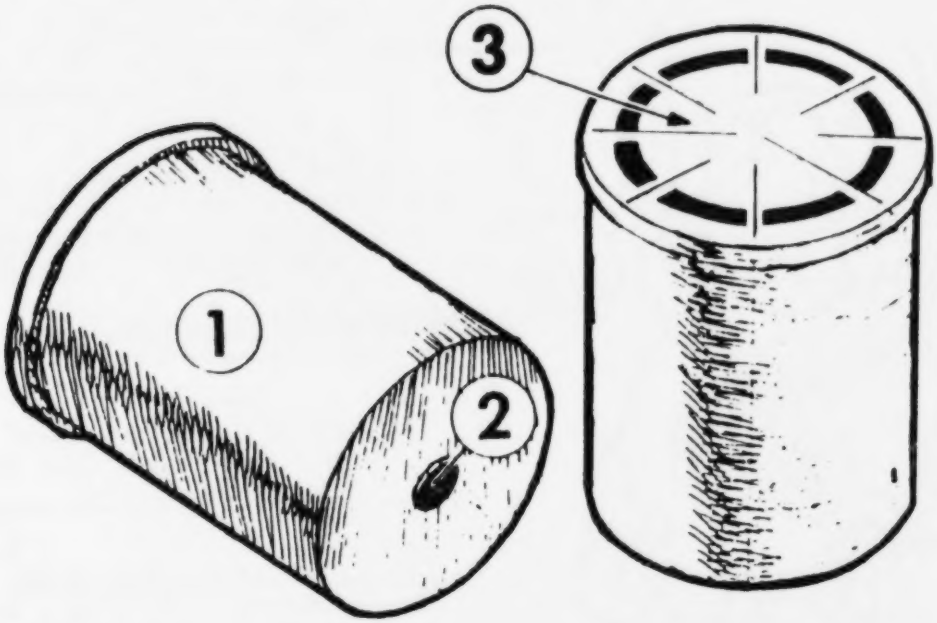


8 Put a drop of CLP at each point shown here.

9 Close the breech door and move the lever to the closed position.

- Report any damage on DA Form 2402, and replace DRAGON.

TASK 3 Inspect ATWESS Cartridges



WARNING

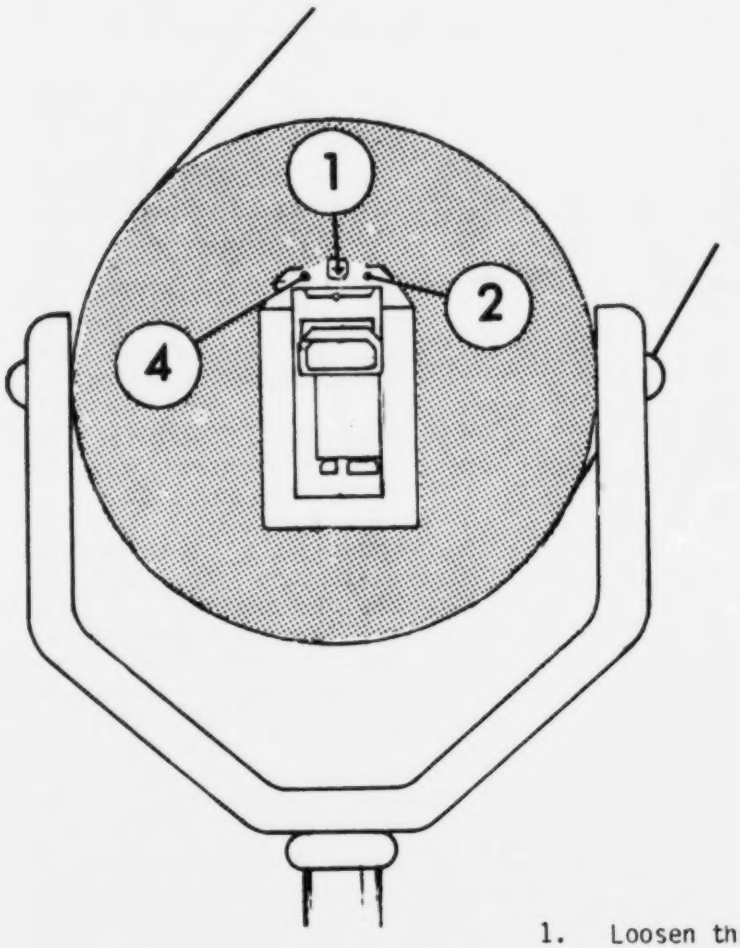
HANDLE ATWESS CARTRIDGES WITH THE SAME CARE YOU USE WITH LIVE AMMUNITION.

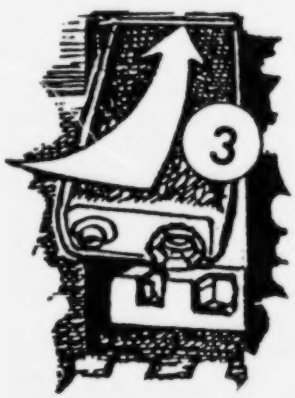
1. Look for cracks in the plastic cartridge case.
2. Look for a dented primer.
3. Look for tears or punctures in the copper disc.

- Return damaged cartridges to your NCOIC for disposal. Replace damaged cartridges.

TASK 4

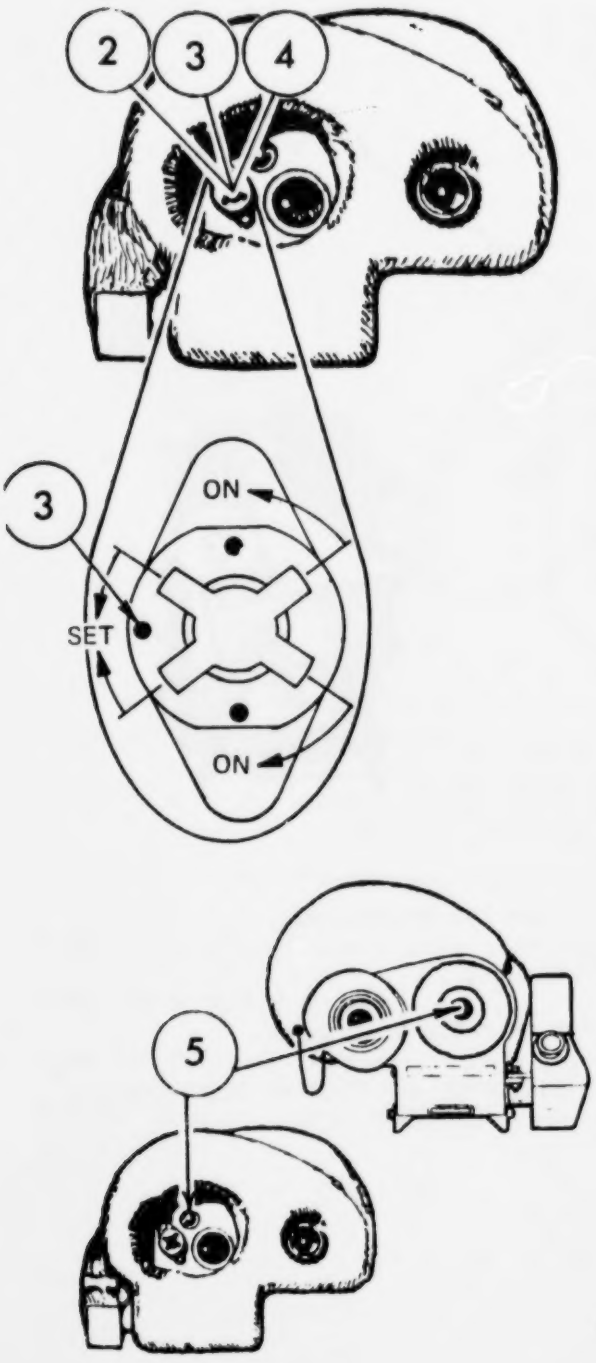
Install Battery in Tube Assembly





1. Loosen the thumbscrew.
2. Open cover.
3. Put in battery as shown.
4. Close cover and tighten thumbscrew.

TASK 5 Test DRAGON/MILES



NOTE

Do not try this test without first installing a battery in DRAGON/MILES. See Task 4.

1. Ask your NCOIC to call the Controller.

2. Remove the yellow weapon key from the DRAGON/MILES transmitter.

3. Ask the Controller to insert his green key in the transmitter and turn it to the SET position.

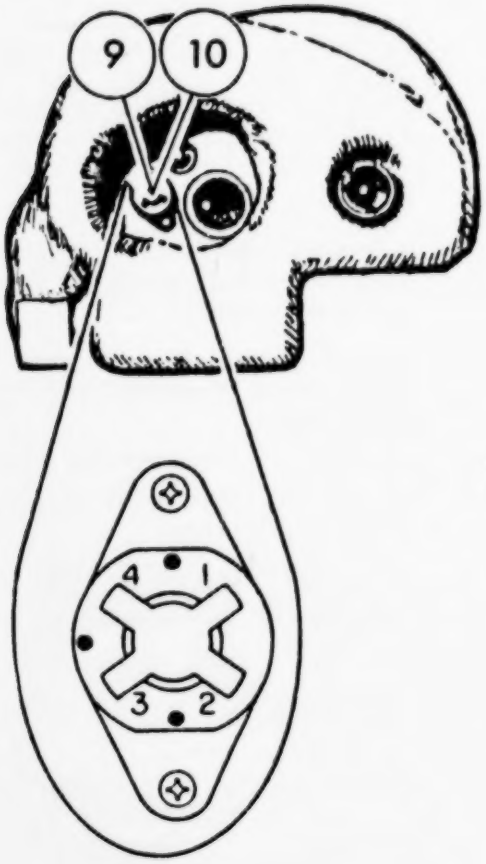
4. Ask the Controller to turn his green key to receptacle position 3.

5. Press the push-to-read button on the FRONT of the transmitter. Read the "rounds remaining" at the REAR of the transmitter. It should show "4".

   If you do not see a "4," remove and reinsert the same battery and repeat steps 3, 4, and 5. If you still do not see a "4," remove battery and replace with a new battery. Repeat the test. If you still do not see a "4," report this failure on a DA Form 2402, and replace the DRAGON/MILES.

6. To test the transmitter, insert the yellow weapon key at position 1 and turn the key to the ON position.

TASK 5



7. Aim and fire at a nearby man or vehicle target. Make sure that the target has an operating MILES system.

8. The target MILES system should show a "near miss" or "kill" indication.

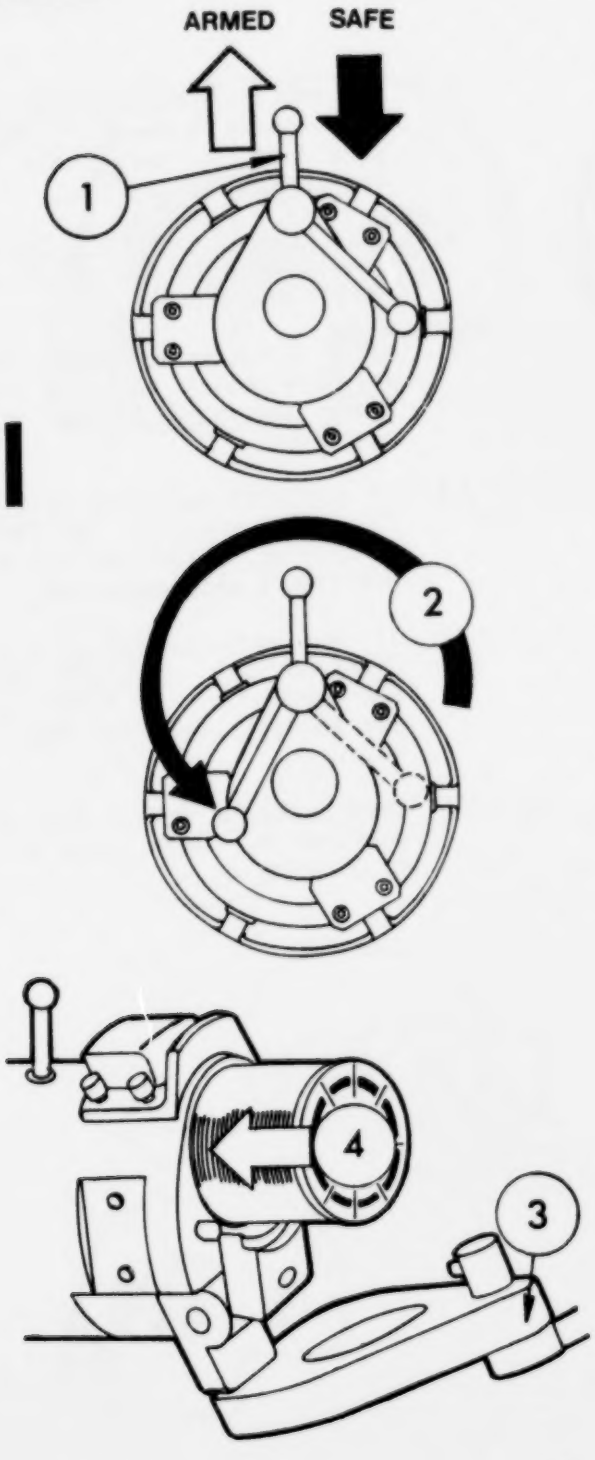
9. After a successful test, ask the Controller tc turn his green key back to the SET position.

10. If you will be using ATWESS for the exercise, ask the Controller to turn the key to position 4 and remove key.

    If you will be using Dry-Fire for the exercise, ask the Controller to turn the key to position 3 and remove key.

11. Insert yellow weapon key at position 2. Then, turn key to ON position.

TASK 6 Fire DRAGON/MILES



WARNING

TREAT THE DRAGON/MILES AS YOU WOULD ANY LOADED AND ARMED WEAPON. DO NOT DROP DRAGON WHEN ATWESS IS LOADED AND ARMED. A STRONG JOLT MAY SET OFF THE ATWESS.

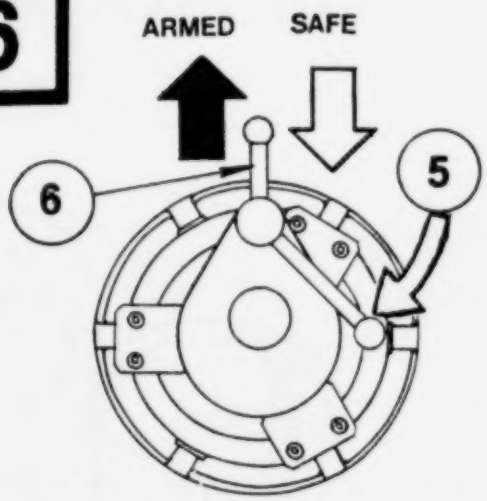
A LOADED ATWESS WILL ALWAYS FIRE WHEN THE DRAGON/MILES IS FIRED IN THE ATWESS MODE.

Assure the backblast area is clear to at least 50 meters before firing the Dragon.

Do NOT do this task unless you are ready to fire.

1. Push SAFE/ARM lever to "SAFE" position.
2. To load ATWESS, move the breech lock lever to open position.
3. Open the breech door as far as it goes. This cocks the ATWESS. Visually check to see if the firing pin is protruding. If unsure, use one hand to feel if the firing pin has retracted to its full length. If the firing pin is protruding, or has not retracted to its full length, tag the weapon as unsafe, and return it to its point of issue.
4. Insert an ATWESS cartridge.

TASK 6

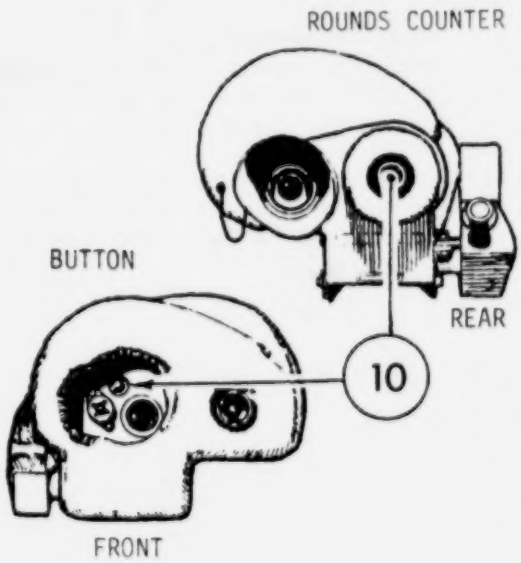


5. Stand to right side of rear of launcher, face away from target, use right hand, close breech door and move breech lock lever to closed position.

6. Pull safety lever to armed position.

> If you decide not to fire, push safety lever to SAFE position. Then open breech door and remove cartridge.

> The FIRST time the DRAGON is fired during each exercise, wait 10 seconds after arming the DRAGON before firing. Observe this delay only once, at the beginning of each exercise.



8. Fire DRAGON. A loaded ATWESS will fire. One second after firing, the laser transmitter starts firing. It will continue firing for 6 seconds.

   If DRAGON does not fire, see next page for misfire procedures.

9. After firing, track your target and count off 7 seconds.

10. If you want to find out how many rounds are remaining, press the Push-to-Read button in the FRONT of the tracker head, and look at the rounds counter in the REAR of the tracker head.

11. To refire DRAGON, repeat steps 2 thru 6, and then aim and fire DRAGON. You may not fire faster than one round every 15 seconds.

    In Dry-Fire mode, just aim and fire.

TASK 6

IF ATWESS DOES NOT FIRE:

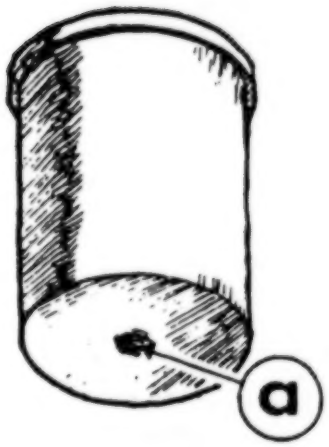
1. Place ATWESS safety lever in SAFE position.

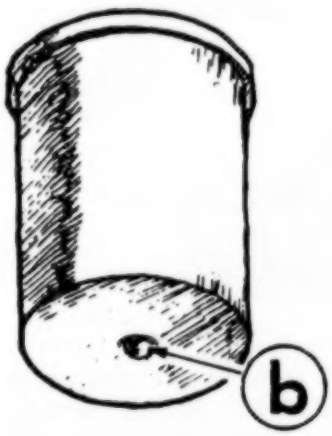
2. Remove ATWESS cartridge from ATWESS.

   a. INSPECT the cartridge primer. If dented treat the cartridge as a DUD. REPORT THE DUD CARTRIDGE TO YOUR NCOIC FOR DISPOSAL.

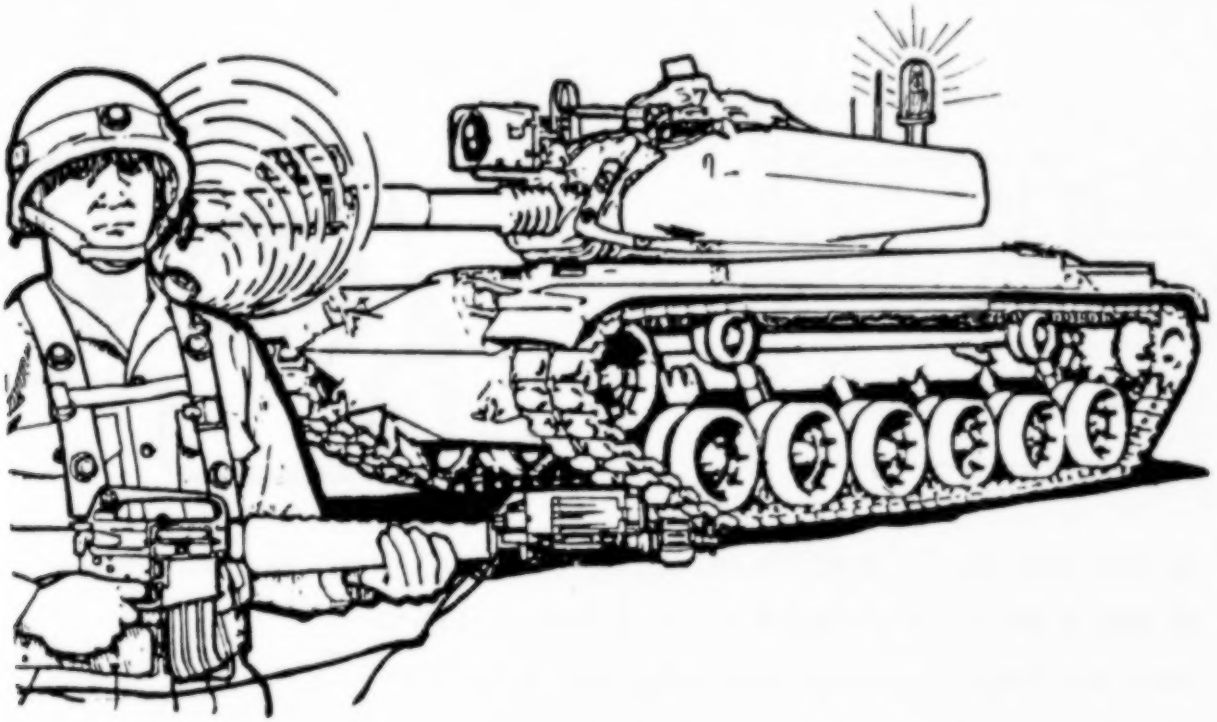
   b. PRESS the PUSH TO READ switch. CHECK the rounds remaining display. If WEAK, replace the battery in the transmitter (see TASK 4).

3. Reload ATWESS cartridge and repeat firing sequence. If ATWESS does not fire, report on DA Form 2402 and replace the DRAGON/MILES.





TASK 7 Observe Your Target



When detectors are hit by laser fire, the CVKI light on vehicles will flash and personnel MWLDs will sound.

If shot is a "near miss:"

The CVKI light flashes 2 to 3 times.

If shot is a "hit" but not a "kill:"

The CVKI light flashes 4 to 6 times.

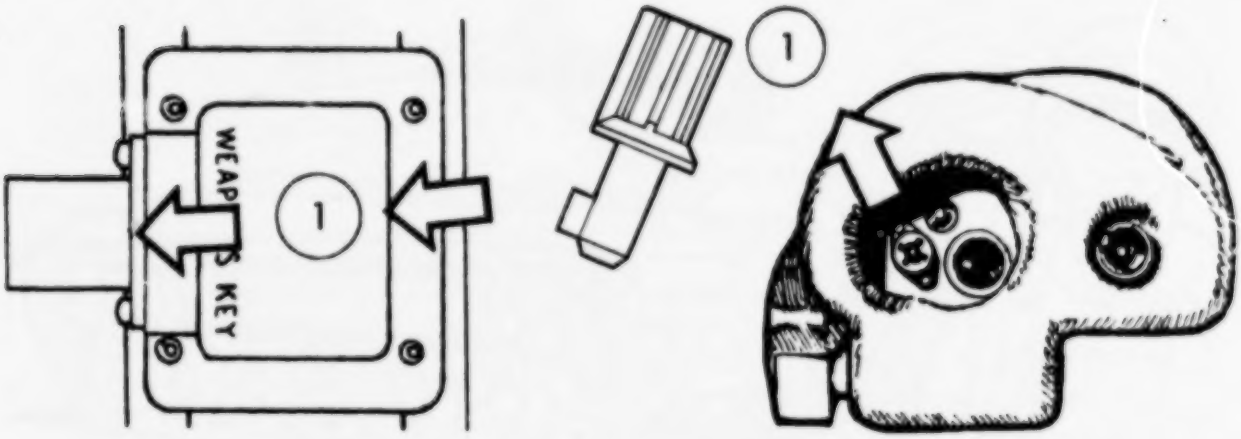
If shot is a "kill:"

The CVKI light flashes continuously.

If you "kill" personnel:

MWLD alarm sounds continuously.

TASK 8 Reset MWLD and DRAGON/MILES



IF YOUR ALARM BEEPS (SOUNDS FOR ONE SECOND), YOU'VE BEEN FIRED ON. TAKE COVER.

IF YOUR ALARM SOUNDS CONTINUOUSLY, YOU'VE BEEN "KILLED."

There are 2 ways to turn off your alarm after a "kill."

1. IF YOU AND THE WEAPON ARE BOTH "KILLED":

   Remove DRAGON weapon key. DRAGON will no longer fire.

   Insert DRAGON key in torso harness and turn key to turn off alarm.

2. IF ANOTHER SQUAD MEMBER IS TO TAKE OVER THE DRAGON:

   Remove weapon key from that squad member's M16 rifle. Laser of M16 rifle will no longer fire.

   Insert rifle key into torso harness and turn key to turn-off alarm.

   Let other squad member take over and operate DRAGON.

TO RESET MWLD AND DRAGON:

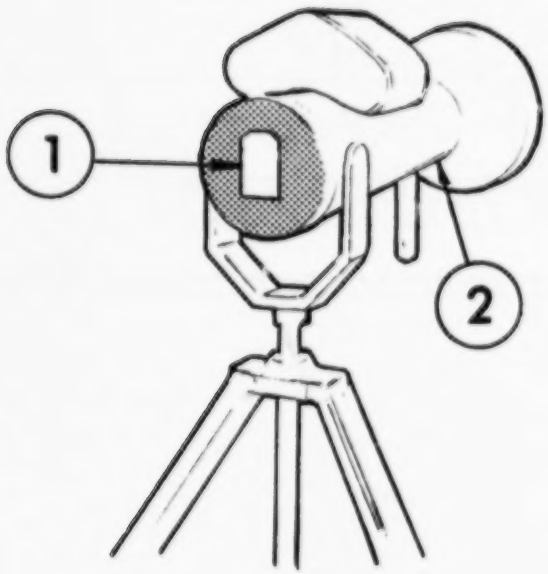
   Ask your NCOIC to call the Controller.

   Remove yellow weapon key from torso harness. Alarm will sound.

   Ask Controller to use his green key to silence your alarm. Ask Controller to use his green key to reset your DRAGON/MILES.

   Put yellow weapon key back in DRAGON transmitter and turn to WEAPON ON position.

TASK 9 Inspect, Clean, and Return DRAGON/MILES/ATWESS

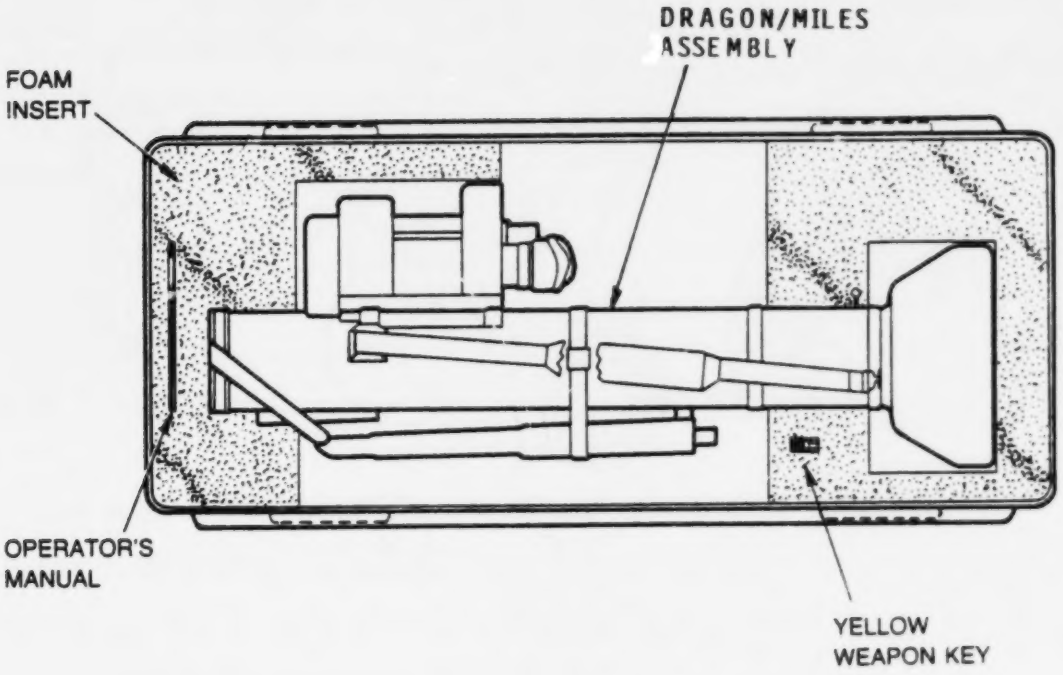


1. Remove battery from DRAGON/MILES and close the door. (See Task 4.)
2. Inspect and clean DRAGON/MILES. (See Task 2.)

Do Task 1: Check DRAGON/MILES equipment.

Return all MILES equipment and unused ATWESS cartridges to your NCOIC. You may be asked to return your MILES equipment to its transit case. If so, follow the instructions on the next page.

TASK 9



Transit Case Loading Instructions

1. Remove yellow weapon key from the tracker head and place key in the space provided.
2. Place the DRAGON/MILES in the transit case as shown.
3. Place Operator's Manual in space provided.

APPENDIX A

REFERENCES

A-1. SCOPE

This appendix lists all forms, field manuals, and technical manuals referenced in this manual.

A-2. FORMS

SF 368	Quality Deficiency Report
DA Form 2028-2	Recommended Changes to Equipment Technical Publications
DA Form 2062	Hand Receipt
DA Form 2402	Exchange Tag
DA Form 2404	Equipment Inspection and Maintenance Work Sheet

A-3. FIELD MANUALS

FM 21-11	Field Manual: First Aid for Soldiers

A-4. TECHNICAL MANUALS

TM 9-1265-368-10-1-HR	Hand Receipt for Simulator System, Firing Laser: M62 for DRAGON Missile System
TM 9-1265-370-10-1	Operator's Manual: Simulator System, Firing Laser: M60 for M16 Rifle
TM 9-1425-480-10	Operator's Manual: DRAGON Weapon System

A-5. MISCELLANEOUS PUBLICATIONS

AR 310-2	Identification and Distribution of DA Publications
SB 11-6	Dry Battery Supply Data
DA PAM 738-750	The Army Maintenance Management System (TAMMS)

APPENDIX B

COMPONENTS OF END ITEM AND BASIC ISSUE ITEMS LISTS

SECTION I. INTRODUCTION

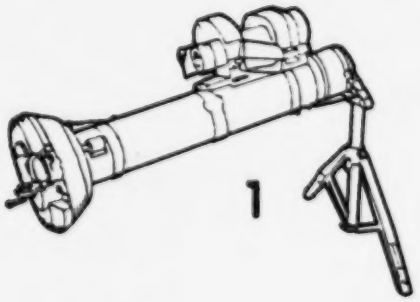
This appendix lists integral components of the DRAGON/MILES system. All of these items must be returned to your NCOIC following a training exercise.

Explanation of Columns:

National Stock Number:	Stock requisition number.
Description:	Lines 1 and 2 give a brief item description.
U/M:	Unit of Measure.
Qty:	Quantity of item furnished for each piece of equipment.
Illustration Number:	Shows where to find an illustration of the item.

SECTION II. COMPONENTS OF END ITEM

National Stock Number	Description FSCM & Part Number	U/M	Qty	Illustration
1265-01-090-0103	DRAGON Missile Simulator System 19200-11749276	ea.	1	1



SECTION III. BASIC ISSUE ITEMS

1 ea. TM 9-1265-368-10-1 Operator's Manual f/ Simulator System, Firing Laser: M62 f/ Dragon Weapon System

APPENDIX C

ADDITIONAL AUTHORIZATION LIST

This Appendix lists additional items you will need to operate the DRAGON/MILES system.

Explanation of Columns:

National stock numbers, descriptions, unit of measure, and quantities are provided to help you identify and request the additional items you will need to operate the DRAGON/MILES system.

National Stock Number	Description FSCM & Part Number	U/M	Qty	Illustration
6135-01-063-1978	*Battery, 9 volt (80058), BA-3090/U	ea.	1	Task 1

*Dry battery listed is used with the equipment. It will not be pre-shipped automatically, but it is to be requisitioned in quantities necessary for the particular organization in accordance with SB 11-6.

APPENDIX D

EXPENDABLE SUPPLIES AND MATERIALS LIST

This Appendix lists the expendable supplies and materials you will use to operate and maintain the DRAGON/MILES system.

Explanation of Columns:

National stock numbers, descriptions, unit of measure, and quantities are provided to help you identify the expendable supplies and materials you will need to operate the DRAGON/MILES system.

Naticnal Stock Number	Description FSCM & Part Number	U/M	Qty
9150-01-079-6124	Cleaner, Lubricant and Preservative (27412), CLP-4	oz.	1
1370-01-085-2601	Cartridge, Practice, M22 (19200), 11749630	ea.	4
6640-00-240-5851	Paper, Lens (81349), NNN-P-40	pk.	1

REFERENCE INFORMATION

This section includes the nomenclature cross reference list, list of abbreviations and explanations of terms (glossary) used in this manual.

A. NOMENCLATURE CROSS REFERENCE LIST

Common Name	Official Nomenclature
Controller Gun	Controller's Gun, Simulator System, Laser
DRAGON/ATWESS Tube Assembly	Tube Assembly, Simulator, Antitank Missile Fire: For DRAGON Missile
DRAGON Tracker Head	Transmitter Assembly, Simulator System, Laser: For DRAGON Missile
Helmet Harness	Detector Assembly, Simulator System, Laser: Man-Worn

B. LIST OF ABBREVIATIONS

ATWESS	Antitank Weapon Effects Signature Simulator
MILES	Multiple Integrated Laser Engagement System
MWLD	Man Worn Laser Detector

C. GLOSSARY

ATWESS Assembly	A device installed in the rear of the DRAGON tube to provide simulated backblast, noise, and smoke.
ATWESS Cartridge	The explosive round used in the ATWESS Assembly.

Controller	The umpire or referee in a MILES training exercise.
Controller Gun	The device used to test MILES detector systems. May also be used to disqualify soldiers or vehicles from an exercise.
Controller Key	The green key used by the Controller to reset MILES transmitters. Also used to reset the MWLD.
Helmet Harness	The part of the laser detector assembly worn on a combat helmet.
Kill	In a MILES training exercise, a continuous alarm sounds indicating the man-worn detector assembly was hit by a laser beam. The yellow weapon key is removed from an M16A1 rifle transmitter and put in the detector assembly to silence the alarm. The transmitter will not operate with weapon key removed.
Laser Beam	In MILES, a harmless invisible beam of light which simulates weapon fire.
Laser Detector Assembly	A device which senses the laser beam directed at it.
Laser Transmitter	A device that sends the laser beam.
Man-Worn Laser Detector	The helmet and torso assembly worn by personnel which senses a laser beam directed toward you.
Near Miss	A one-second alarm from the MWLD or MGS box that indicates laser fire directed toward you.
Simulator	A training device which takes the place of real equipment and which has many of its characteristics.
Torso Harness	The part of the laser detector assembly worn on the upper body.

Weapon Key	This yellow key has two uses: 1. To turn on the DRAGON transmitter. 2. When alarm sounds, remove from transmitter and insert in MWLD weapon key receptacle to shut off alarm.
Weapon Key Receptacle	There are two of these small devices: 1. One on the MWLD which receives the yellow weapon key to shut off alarm. 2. One on the DRAGON tracker head which receives a Controller Key to reset the system, and a yellow key to turn on the system.

By Order of the Secretary of the Army:

CARL E. VUONO
General, United States Army
Chief of Staff

Official:

R. L. DILWORTH
Brigadier General, United States Army
The Adjutant General

DISTRIBUTION:

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SOMETHING WRONG WITH THIS PUBLICATION?

FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)
Your mailing address

DATE SENT
Date you send in form

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE
TM9-1265-368-10-1	15 July 1988	(MILES) Simulator System, Firing, Laser: M62 for Dragon Missile

BE EXACT. PIN-POINT WHERE IT IS

PAGE NO.	PARAGRAPH	FIGURE NO.	TABLE NO.
8	5		
12	1		
12	7		
14	4		

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

Line 5. Change spelling of word unitl to read until

Change the word harnesses to read harness

Change to read: Ask controller to insert his green key into the key receptacle and turn off alarm.

Delete the word it from sentence

SAMPLE

PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER
JOHN SMITH SP/3 XXX-XXXX

SIGN HERE:
John Smith

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TM 9-1265-368-10-1
C1

URGENT CHANGE

CHANGE

No. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 16 August 89

OPERATOR'S MANUAL

FOR

MULTIPLE INTEGRATED LASER ENGAGEMENT SYSTEM
(MILES)
SIMULATOR SYSTEM, FIRING, LASER: M62
(NSN 1265-01-090-0103)
FOR

DRAGON WEAPON SYSTEM

TM 9-1265-368-10-1, dated 15 July 1988, is changed as follows:

1. Replace the old pages with the new pages as indicated below.

2. New or changed text is indicated by a vertical bar in the margin of the page.

3. Added or revised illustrations are indicated by a miniature pointing hand.

Remove Pages	Insert Pages
11 and 12	11 and 12
13 and 14	13 and 14
17 and 18	17 and 18

File this change sheet in back of the publication for reference purposes.

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General, United States Army
Chief of Staff

Official:

WILLIAM J. MEEHAN II
Brigadier General, United States Army
The Adjutant General

DISTRIBUTION:

To be distributed in accordance with DA Form 12-32, Operator's Maintenance requirements for MILES Simulator System, Firing, Laser M62 (for DRAGON).

☆ U.S. GOVERNMENT PRINTING OFFICE : 1990 O - 261-872 (21153)

THE METRIC SYSTEM AND EQUIVALENTS

LINEAR MEASURE

1 Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches
1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 Inches
1 Kilometer = 1000 Meters = 0.621 Miles

WEIGHTS

1 Gram = 0.001 Kilograms = 1000 Milligrams = 0.035 Ounces
1 Kilogram = 1000 Grams = 2.2 Lb
1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons

LIQUID MEASURE

1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces
1 Liter = 1000 Milliliters = 33.82 Fluid Ounces

SQUARE MEASURE

1 Sq Centimeter = 100 Sq Millimeters = 0.155 Sq Inches
1 Sq Meter = 10,000 Sq Centimeters = 10.76 Sq Feet
1 Sq Kilometer = 1,000,000 Sq Meters = 0.386 Sq Miles

CUBIC MEASURE

1 Cu Centimeter = 1000 Cu Millimeters = 0.06 Cu Inches
1 Cu Meter = 1,000,000 Cu Centimeters = 35.31 Cu Feet

TEMPERATURE

5/9 ($^{\circ}$F - 32) = $^{\circ}$C
212° Fahrenheit is equivalent to 100° Celsius
90° Fahrenheit is equivalent to 32.2° Celsius
32° Fahrenheit is equivalent to 0° Celsius
9/5 C$^{\circ}$ + 32 = F$^{\circ}$

APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Square Inches	Square Centimeters	6.451
Square Feet	Square Meters	0.093
Square Yards	Square Meters	0.836
Square Miles	Square Kilometers	2.590
Acres	Square Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
Pints	Liters	0.473
Quarts	Liters	0.946
Gallons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds per Square Inch	Kilopascals	6.895
Miles per Gallon	Kilometers per Liter	0.425
Miles per Hour	Kilometers per Hour	1.609

TO CHANGE	TO	MULTIPLY BY
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Square Centimeters	Square Inches	0.155
Square Meters	Square Feet	10.764
Square Meters	Square Yards	1.196
Square Kilometers	Square Miles	0.386
Square Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
Liters	Gallons	0.264
Grams	Ounces	0.035
Kilograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pound-Feet	0.738
Kilopascals	Pounds per Square Inch	0.145
Kilometers per Liter	Miles per Gallon	2.354
Kilometers per Hour	Miles per Hour	0.621

TA089991